VENDOR NAME: SBC SNET		**FEIN:** 06-054-26-46

SERVICE/PRODUCT NAME: ATM and Frame Relay Service – ATM Service
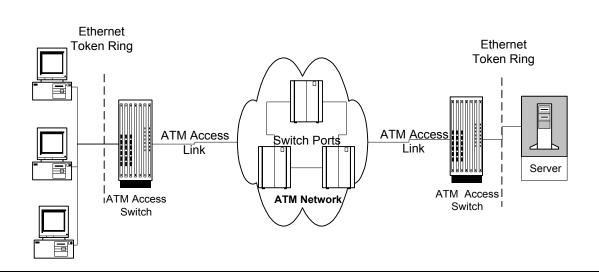
SERVICE/PRODUCT DESCRIPTION:

ATM Architecture

Asynchronous Transfer Mode (ATM) Service is a fast packet, 53-byte cell-based switching and transport technology that can transport voice, video, and data applications over a single physical access link to the ATM network. ATM combines the benefits of circuit switching (predictable transmission delay and guaranteed capacity) with the benefits of packet switching (flexibility and efficient handling of bursty traffic).

"Transfer mode" refers to the switching and multiplexing process. "Asynchronous" means that the ATM multiplexer assigns slots on an as-needed basis in the continuous stream of cells that it sends out, so the information rate of a particular connection may vary when delivered to the network. This process allows ATM to interleave bursty data transmissions (like email) with delay-sensitive transmissions (like voice and video) over the same physical circuit.

ATM is a connection oriented high-speed offering. Data transmissions (cells or segments of end user data) sent through the ATM network always follow the same pre-defined path with the data arriving in the order it was sent. The wide area network (WAN) connection of an ATM Cell Relay Service is provided using digital access facilities between a customer's premises and an ATM node (switch port). A virtual connection between customer-selected locations is established within the ATM switch through a software defined logical connection called a permanent virtual circuit (PVC). The software defined PVC allows real time dynamic allocation of switch capacity.

ATM uses logical connections or software-defined connections between end points in the network. These permanent virtual connections (PVCs) can be either virtual channel connections (VCC) or virtual path connections (VPC) in the ATM Cell Relay Service network. A VCC is simply an individual point-to-point virtual connection carrying one application, whereas a VPC is a collection of VCCs routed together as one unit end-to-end through the network.

Frame to ATM Interworking provides a smooth and seamless migration from frame relay to ATM on a per site basis as the connectivity needs of an individual site change and grow. One or two network sites can be upgraded to ATM without affecting the rest of the network. The network provides the protocol conversion.

SBC SNET Product Offerings
Access Link (Physical circuit connection from the customer location to the serving ATM Switch)

- DS1—up to 1.5 Mbps
- DS3—up to 40 Mbps
- OC3—up to 148 Mbps

Quality of Service (ATM Quality of Service (QoS) specifies the level of performance on the channel)

- Constant Bit Rate (CBR) carries the highest rating for applications that are real-time and delay-sensitive, like voice and video.

- Variable Bit Rate (VBR) is designed for bursty data traffic (like email, file transfer, local_area_network-to-local_area_network interconnection). SBC SNET provides non real time VRB (nrtVBR) in this product offering.

- Unspecific Bit Rate (UBR) does not offer any service guarantees. The user is free to send any amount of data up to the link speed while the network makes no guarantees on cell loss rate, delay, or delay variation.

- UBR is mainly used with DSL service and is standard with SBC SNET Remote LAN (RLAN) DSL Transport Service (See xDSL Product Schedule for more information on RLAN).

SERVICE LEVELS:
Installation Intervals
DS1 Less than 10 circuits (includes port and access link) = 20 business days
DS3, OC-3 Less than 10 circuits (includes port and access link) = 45 business days
10 or more circuits = Individual Case Basis

Routine Repair Intervals
DS1Response time = Less than 1 hour
DS3, OC-3 = Less than 30 minutes
Repair Resolution time = 4 hours or less

Repair Service Level Definitions:
Repair Response is the time elapsed between when SNET receives a report of a problem or otherwise becomes aware of a problem, and the time that SNET responds to the end user or other designated contact to verify the problem.

Repair Resolution Time means the elapsed time between when the State notifies SNET of a problem, and the time that SNET restores service and such service is acceptable to the State.

SERVICE AVAILABILITY/LIMITATIONS:

SERVICE AVAILABILITY
See Service Availability spreadsheet

PROVISIONING PARAMETERS

FRAME RELAY TO ATM

Port Spd Kbps	CIR Kbps	Policing	Bc Kbps	Be Kbps	PIR KBPS	SIR KBPS	PCR CPS	SCR CPS	MBS CPS	CDVT usec	VBW CPS	Policing
56	28	enabled	28	28	70	35	165	83	83	600	n/a	enabled
64	32	enabled	32	32	80	40	188	94	94	600	119	enabled
128	64	enabled	64	64	159	80	375	188	188	600	273	enabled
256	128	enabled	128	128	318	159	750	375	375	600	619	enabled
384	192	enabled	192	192	477	239	1125	563	563	600	983	enabled
1536 (T-1)	128	enabled	128	1408	1908	159	4500	375	375	600	3526	enabled
1536 (T-1)	256	enabled	256	1280	1908	318	4500	750	750	600	4013	enabled
1536 (T-1)	384	enabled	384	1152	1908	477	4500	1125	1125	600	4176	enabled
1536 (T-1)	512	enabled	512	1024	1908	636	4500	1500	1500	600	4258	enabled
1536 (T-1)	768	enabled	768	768	1908	954	4500	2250	2250	600	4340	enabled

The values in the above chart assume Port Speed refers to a Frame Relay Circuit pointed to an ATM OC-3

ATM TO ATM (Non-Real Time Variable Bit Rate)

Port Speed	BW	QoS	PIR (KBPS)	SIR/MIR (KBPS)	PCR (CPS)	SCR (CPS)	MBS (Cells)	CDVT (usec)	Policing
OC3	5Mbps	nrtVBR	10000	5000	23585	11792	32	600	enabled
OC3	10Mbps	nrtVBR	20000	10000	47170	23585	32	600	enabled
OC3	20Mbps	nrtVBR	40000	20000	94340	47170	32	600	enabled
OC3	25Mbps	nrtVBR	50000	25000	117925	58962	32	600	enabled
OC3	30Mbps	nrtVBR	60000	30000	141509	70755	32	600	enabled
OC3	50Mbps	nrtVBR	100000	50000	235849	117925	32	600	enabled
OC3	100Mbps	nrtVBR	149000	100000	351415	235849	32	600	enabled
OC3	149Mbps	nrtVBR	149000	149000	351415	351415	32	600	enabled

ATM to ATM MBS Values:
Ethernet = 32 cells (default)
FDDI = 100 cells (by request)
Token Ring = 200 cells (by request)

MASTER AGREEMENT NUMBER:			B-03-006						DOIT APPROVAL DATE:		**10/10/2003**

VENDOR NAME:	SBC SNET							VENDOR FEIN: 06-054-26-46			

SERVICE NAME: ATM and Frame Relay Service - ATM Service

A 2% credit will be issued monthly against the items ordered from this Product Schedule per the SBC SNET Master Agreement

Activity (Add, Delete, Change)	Date of Vendor Request	Date Approved By DOIT	Item	Item Code	Description of Service/Equipment	Unit	Initial Conversion: Non-Recurring Unit Cost	Post-Conversion: Non-Recurring Unit Cost	Recurring Monthly Cost
Add	10/08/03	10/10/03	1		ATM Port and Access Link DS1	port + acc link	$0.00	$0.00	$412.00
Add	10/08/03	10/10/03	2		ATM Port and Access Link DS3	port + acc link	$0.00	$0.00	$1,400.00
Add	10/08/03	10/10/03	3		ATM Port and Access Link OC3	port + acc link	$0.00	$0.00	$1,080.00
Add	10/08/03	10/10/03	4		ATM PVC Bandwidth CBR (per 1/2 Meg)	1/2 Mb per port	$0.00	$0.00	$16.00
Add	10/08/03	10/10/03	5		ATM PVC Bandwidth VBR (per 1/2 Meg)	1/2 Mb per port	$0.00	$0.00	$6.00
Add	10/08/03	10/10/03	6		ATM PVC Bandwidth UBR (per 1/2 Meg)	1/2 Mb per port	$0.00	$0.00	$4.50
Add	10/08/03	10/10/03	7		ATM DS1 Interoffice Access Mileage (per mile)	mile	$0.00	$0.00	$16.00
Add	10/08/03	10/10/03	8		ATM DS3 Interoffice Access Mileage (per mile)	mile	$0.00	$0.00	$112.00
Add	10/08/03	10/10/03	9		ATM OC3 Interoffice Access Mileage (per mile)	mile	$0.00	$0.00	$90.00
Add	10/08/03	10/10/03	10		ATM Add or Remove Port Bandwidth (per Port)	port	$0.00	$0.00	$0.00
Add	10/08/03	10/10/03	11		ATM Rearrange Bandwidth or PVC	link	$0.00	$0.00	$0.00